

Arkema Facility - Harvey Response

Crosby, TX

Arkema Inc.

September 1, 2017

Project #109489 Summary

1.0 Introduction

As a result of flooding events related to Hurricane Harvey, the Arkema facility located in Crosby, TX suffered a loss of power and failure on refrigeration of manufacturing process. The loss of temperature control resulted in degradation and heating of organic peroxides, with the potential of creating a fire. As a precautionary measure, local authorities established a 1.5-mile radius evacuation zone around the facility.

On August 31, 2017, the Center for Toxicology and Environmental Health, LLC (CTEH®) was contacted by Arkema Inc. (Arkema) to initiate air monitoring and sampling around the community areas outside of the evacuation zone perimeter. This submittal summarizes the results of real-time air monitoring conducted by CTEH® personnel on from August 31, 2017 through September 1, 2017. A map of the site location is provided in **Attachment A**.

2.0 Real-time Air Monitoring

All real-time air monitoring instrumentation was calibrated per the manufacturer's recommendations prior to air monitoring. Handheld, real-time air monitoring was conducted for carbon monoxide (CO) and volatile organic compounds (VOCs) using RAE Systems MultiRAE Plus instruments. Additionally, levels of particulate matter (PM_{2.5}) potentially related to fire smoke were assessed using TSI SidePak AM510 and Dusttrak aerosol monitors. **Table 1** summarizes the data for all real-time air monitoring readings recorded in Crosby, TX from 12:57 August 31, 2017 through 06:00 on September 1, 2017. Maps of real-time air monitoring locations are provided as **Attachment B**.

**Table 1 Real-time Handheld Air Monitoring Readings
12:57 August 31, 2017 – 06:00 September 1, 2017**

Analyte	Instrument	Number of Readings	Number of Detections	Range of Detections*
Benzene	UltraRAE	23	0	< 1.0 ppm
CO	MultiRAE Plus	16	0	< 1.0 ppm
Cumene	Gastec Tube 122L	6	0	< 50 ppm
LEL	MultiRAE Plus	6	0	< 1.0 %
VOCs	MultiRAE Plus	139	0	< 0.1 ppm
PM _{2.5}	AM510	110	110	0.023 – 0.074 mg/m ³
	Dusttrak	25	25	0.023 – 0.049 mg/m ³

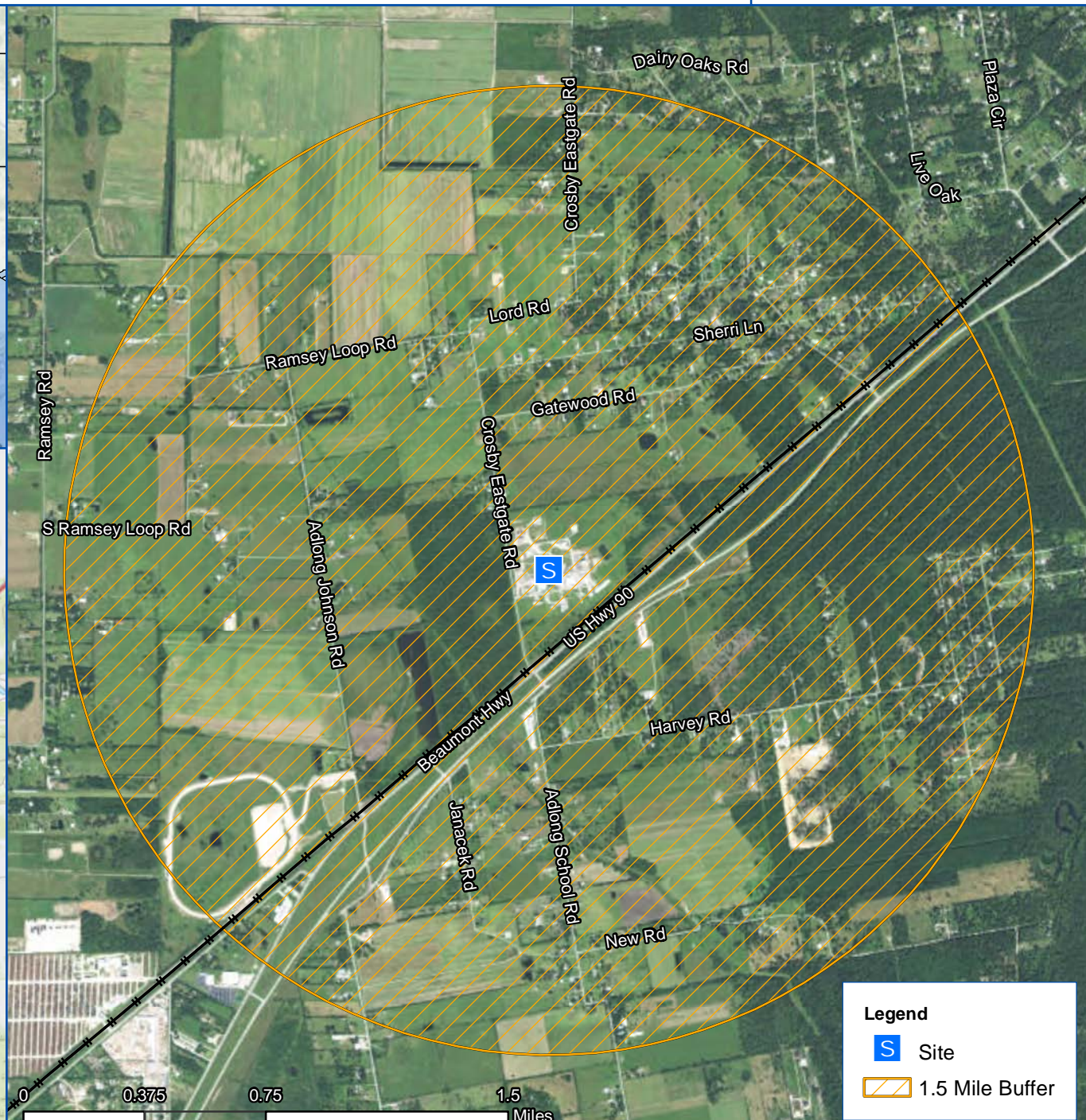
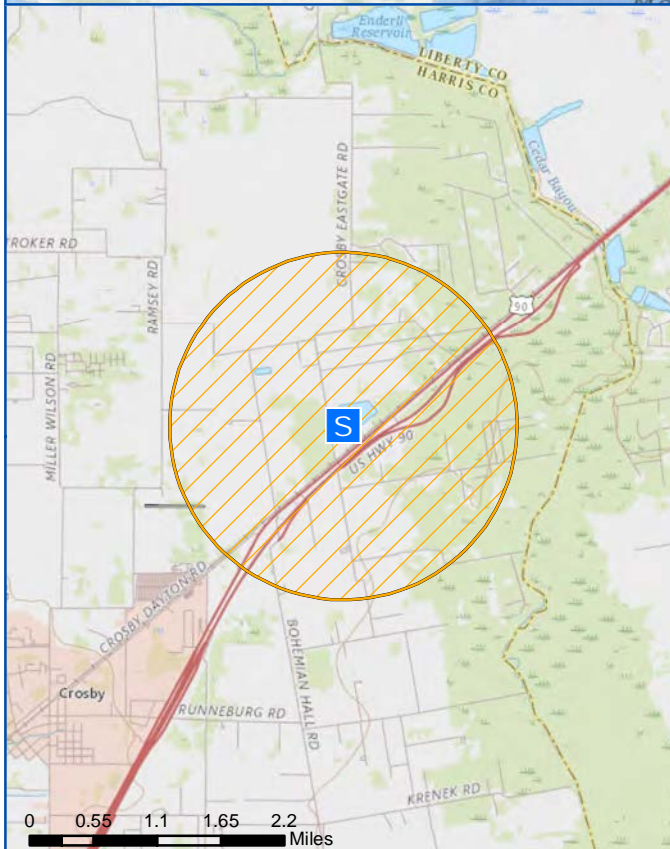
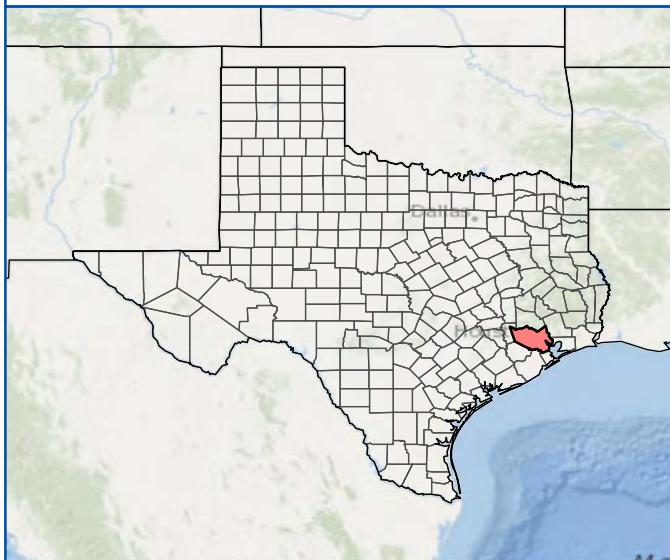
*If detections were not observed, the instrument detection limit is listed in this column.

3.0 Analytical Air Sampling



To supplement real-time air monitoring, CTEH® deployed areas along the perimeter of the evacuated area within the community. Evacuated canister (Minican™) samplers were regulated to collect air evenly over a 24-hr period. Analytical air samples will be submitted to SGS Galson Laboratories, an AIHA-accredited laboratory, for analysis using EPA Method TO-15. A map highlighting the analytical air sampling locations is provided as **Attachment C**. Analytical Air Sampling Results will be reported upon receipt from the laboratory.

Attachment A

Site Location Map



Legend

-  Site
-  1.5 Mile Buffer

Attachment B

Handheld Real-time Air Monitoring Locations

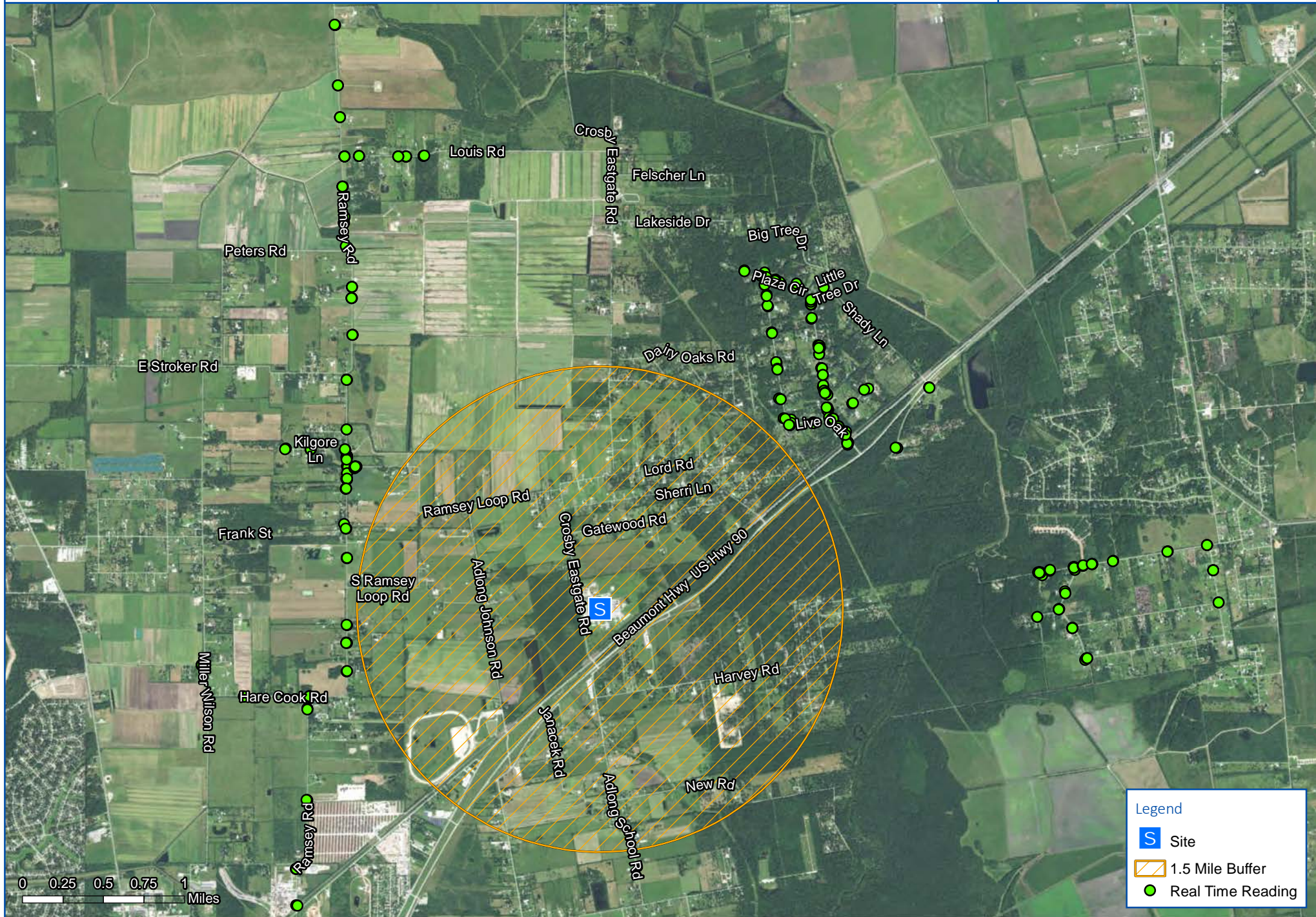


Hand-held Real-time Reading Locations

Harvey Response - 12:57 August 31, 2017 to 06:00 September 1, 2017

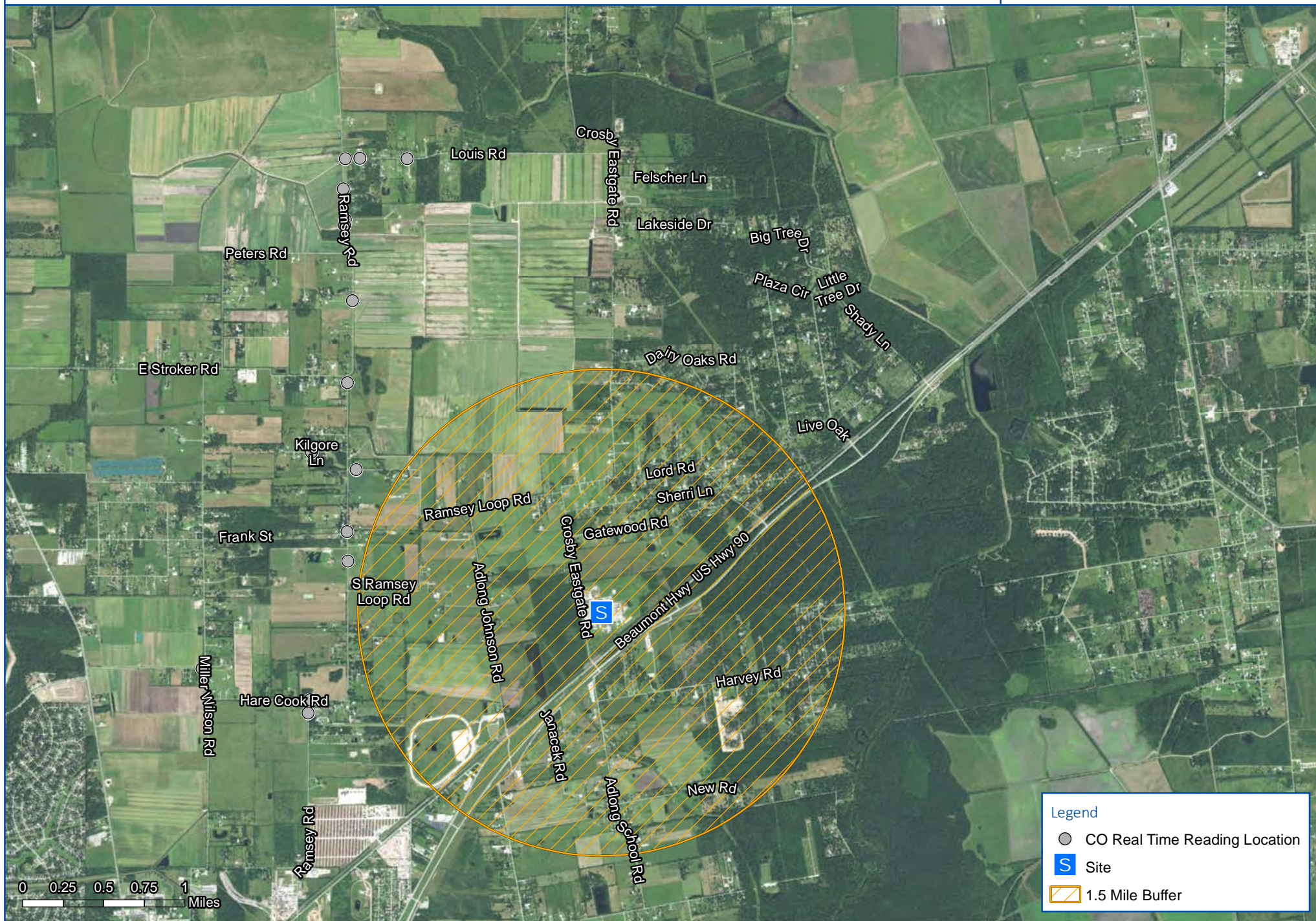


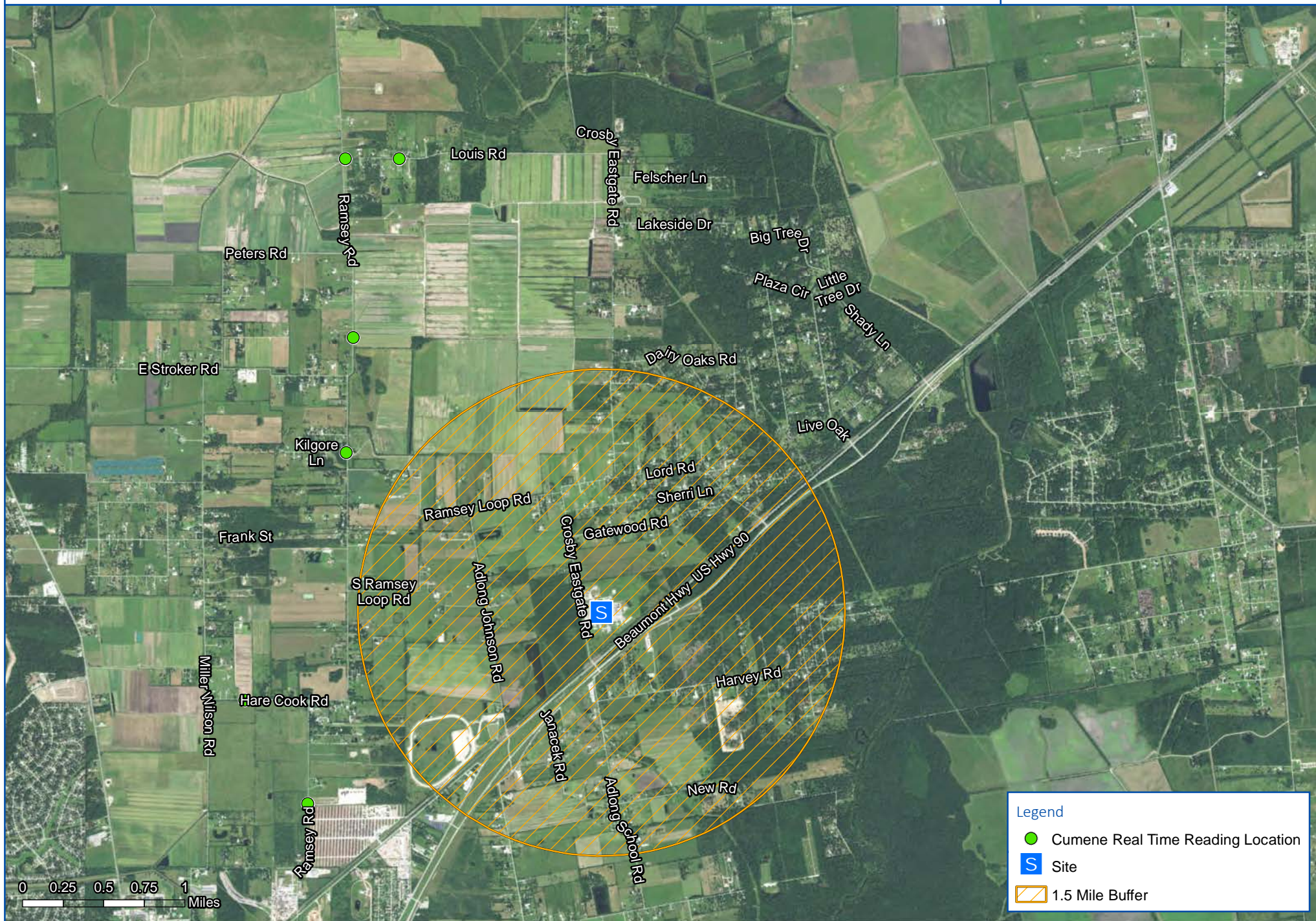
Project: 109458
Client: Arkema
City: Crosby, TX
County: Harris



Legend

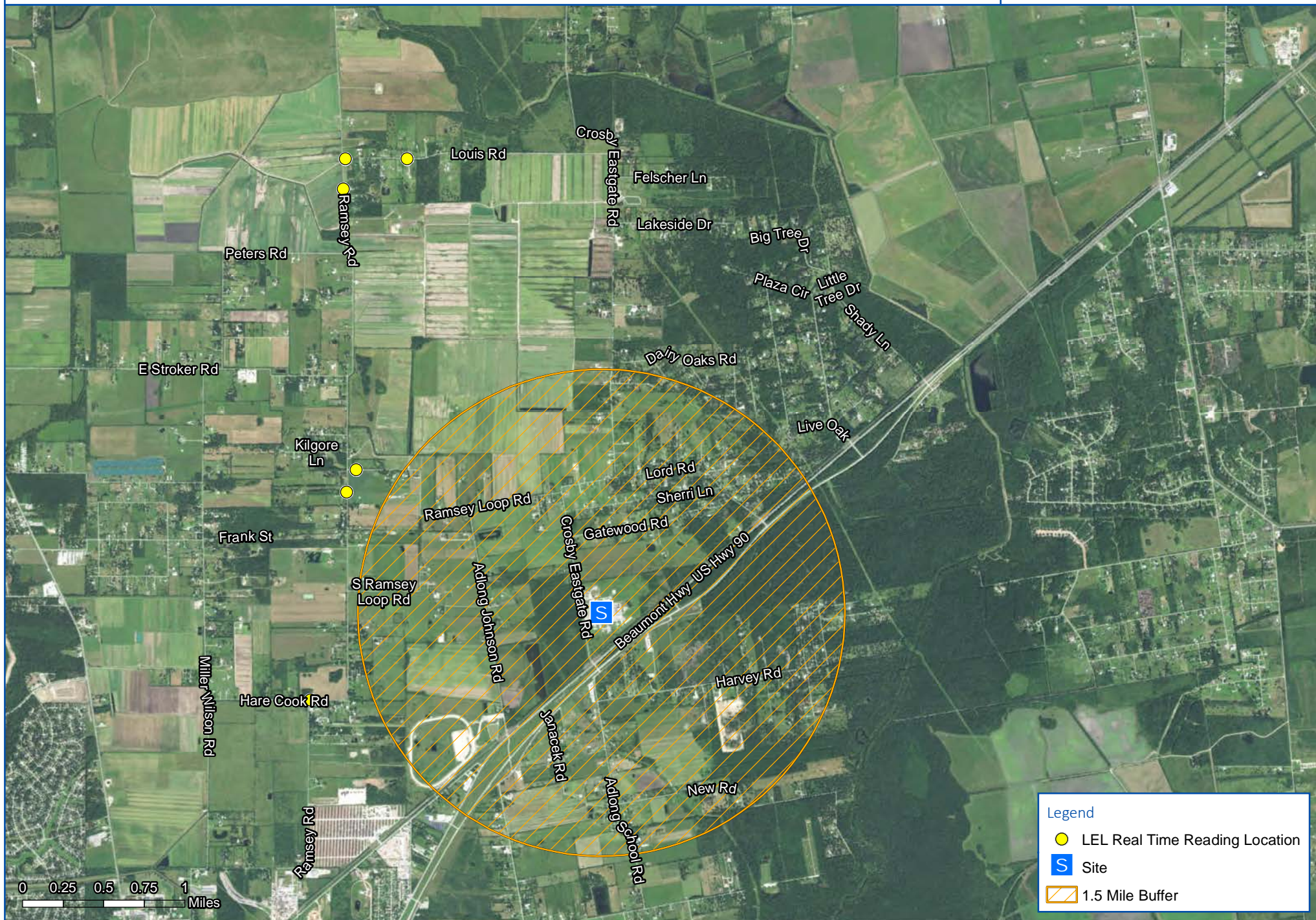
- Site
- 1.5 Mile Buffer
- Real Time Reading

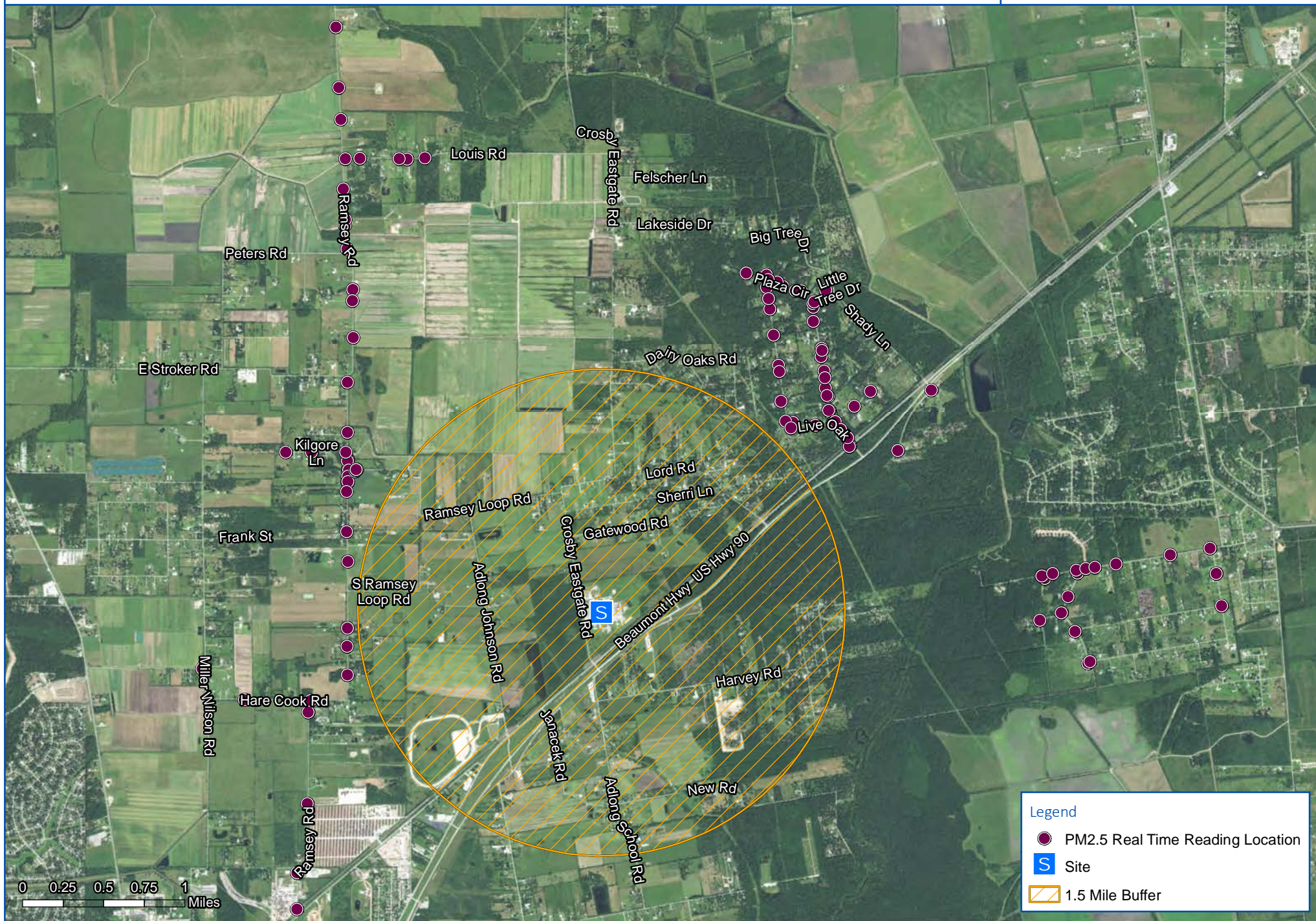




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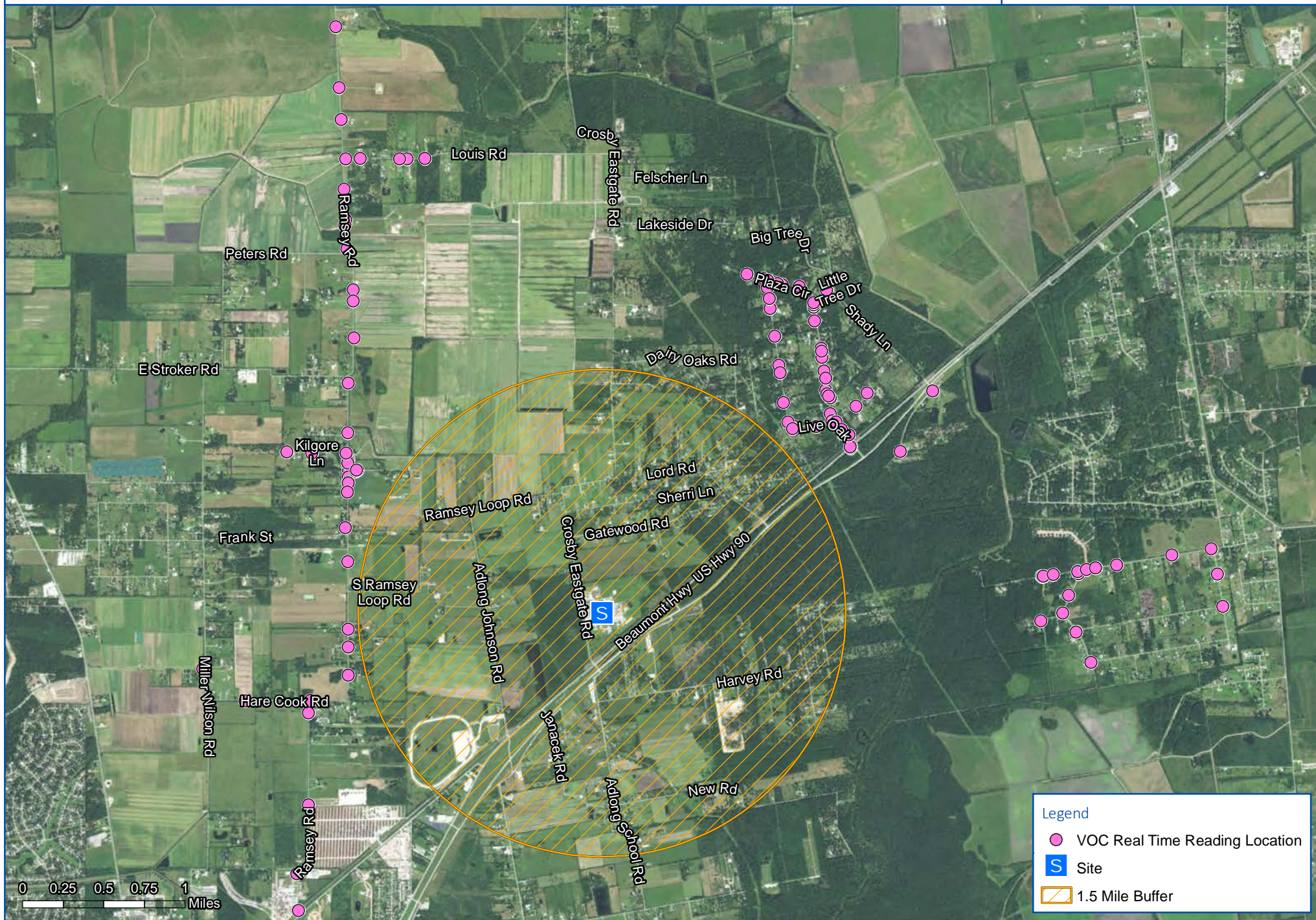
- Cumene Real Time Reading Location
- Site
- 1.5 Mile Buffer





Legend

- PM2.5 Real Time Reading Location
- Site
- 1.5 Mile Buffer

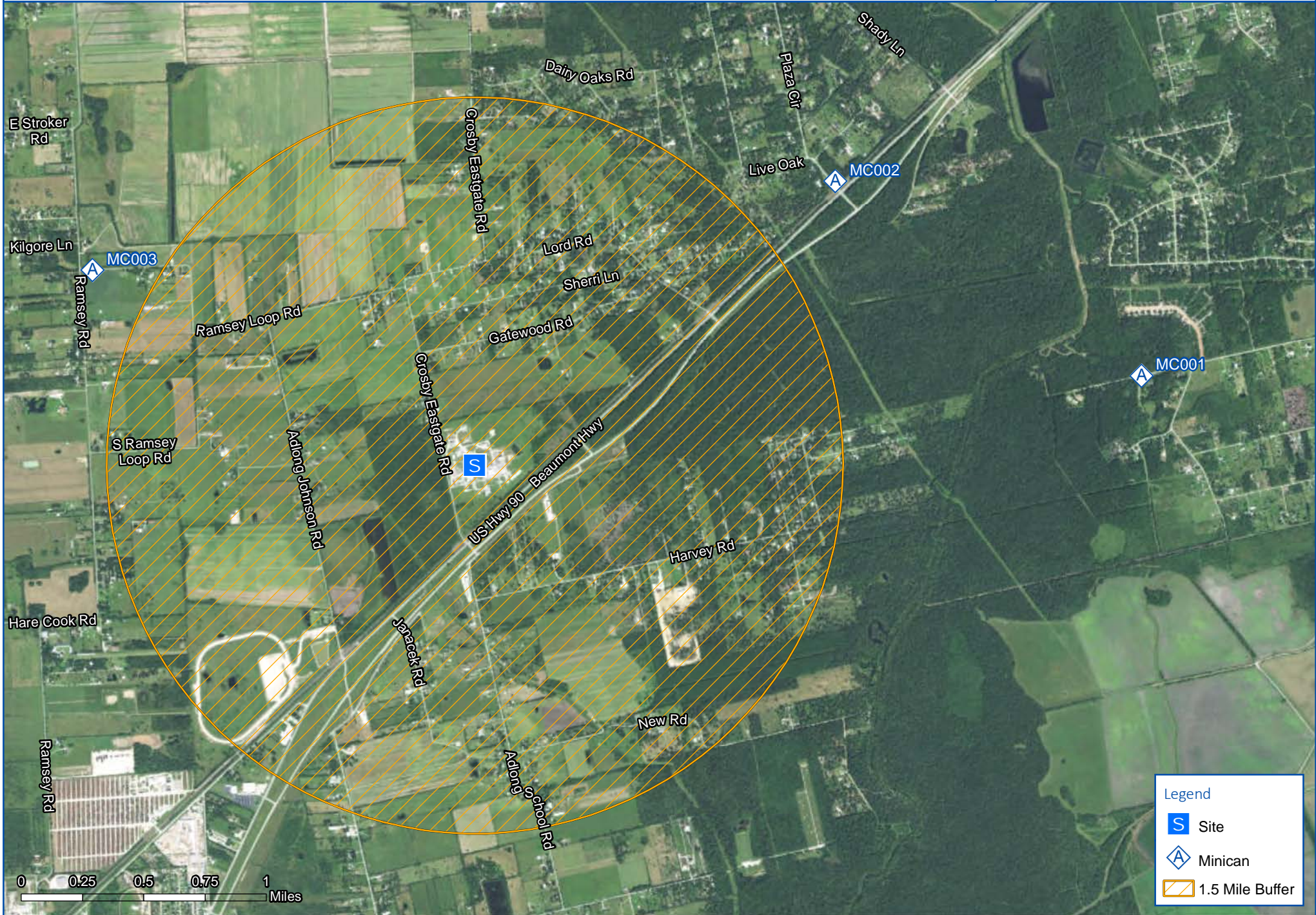


Legend

- VOC Real Time Reading Location
- Site
- 1.5 Mile Buffer

Attachment C

Map of Analytical Air Sampling Locations



Attachment D

KHPY Windrose

(Highland Park Airport - 12.5 miles SSE of Site)

Weather Station: KHPY
Date: 2017-08-31

